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Use of Textism by University Students in Nigeria

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Abstract— The introduction of computer-mediated communications brought the use of textism into human communication. Even though there are overwhelming advantages that surround the use of textism, concerns have been raised on the effect of the use of textism on students' use of the English language. This study investigated the use of textism by University of Ibadan students as well as the factors that influence use. The descriptive survey research design was adopted. Data were collected by an online questionnaire and an observation of Whatsapp chats of the students. The study confirmed the use of textism in computer-mediated communication by students as textism was used consciously and unconsciously, and was used both in formal and informal discussions. A below-average number of the students reported that they used textism daily and in every chat (47.4% and 44.0% respectively). Analysis of the Whatsapp chats also revealed a high use of textism and the various types of textism used by the students. Brevity, speed, and creativity were major reasons for the use of textism. Phonological approximation (30.5%) was the most used, while homophones and onomatopoeia (0.01% respectively) were the least used. The test of hypotheses revealed that all the independent variables except the structure domain have significant relationships ($p<0.05$) with the use of textism. Sociolinguistic maxims, peer influence, and language influence have strong and positive correlations ($r = 0.595, 0.657,$ and 0.581 respectively), while personality traits and psychological factors have moderate and positive correlations ($r = 0.480$ and 0.489 respectively). The study made some recommendations.

Keywords/Index Terms—Language Influence, Peer Influence, Personality traits, Psychological Factors, Sociolinguistic Maxims, Use of Textism, University of Ibadan students, Whatsapp chats

1. Introduction

The following excerpt from Thurlow (2006, p. 686) was reported to be a school essay of a 13 years old Scottish girl:

> My smmr hols wr CWOT,
> B4, we used 2 go 2 NY 2C
> my bro, his GF & thr 3:-@
> kds FTF. ILNY, its gr8, Bt
> my Ps wr so{:-/ BC o 9/11
> tht thay dcdd 2 stay in
> SCO & spnd 2 wks up
> N….

Looking through the essay, the question to ask is: would readers prefer to read the above statements or this? -

> My summer holidays were a complete waste of time, before, we used to go to New York to see my brother, his girlfriend and their three screaming kids face to face. I love New York, it is great. But my parents were so worried because of the terrorist attack on September 11 that they decided to stay in Scotland and spend two weeks up North…

The excerpts show the direction of Computer-Mediated Communication (CMC) as the Internet generation has adopted textism as shortcuts in CMC. Technologically-savvy men and women are exploiting the full potential of networked computers, mobile phones, and related digital communication devices for interpersonal communication. Information sharing and the way people interact with other members of society are being affected by the possibilities of Web 2.0 technologies, such as Whatsapp, Facebook, Twitter, and Weblog, which constitute a new wave of communication, and which require specialised or new linguistic practices. This innovation is affecting individuals and nations socially, technologically, and culturally, and also fundamentally influencing virtual communication with noticeable spelling and typographical errors, especially in informal electronic communication.

CMC refers to human communication which takes place synchronously, asynchronously, or in real-time interactions via electronic devices, or via information and communication technologies, such as instant messaging, electronic mail, social network services, and text-based interactions like text messaging tools to exchange text, images, audio, and video. (Herring (2001, 2004). The use of CMC for social interactions cannot be overemphasised because of the edge that it offers over face-to-face communication. CMC offers flexible communication and facilitates access to previous discussions and information without being constrained by time and location. The language used in most CMC is spontaneous due to the need to react or respond as quickly as possible, even though the sender has the opportunity to carefully write and review the message before sending it, which is not always possible in speech communication (Indrová, 2011).

Research into texting in English has highlighted specific ways in which people write text messages in CMC, especially for informal communications, which include the use of lexical, morpho-syntactic to orthographic features. These unconventional forms have been labeled 'textism' or 'textese' (Plester et al., 2008), 'Txt' (Shortis, 2007), and other similar terms. For consistency, this paper uses the term 'textisms'. Textism is a

distinctive style of conversation and writing feature, the non-orthographical or non-standard style of writing used in online conversations such as chat rooms, forums, and social media. (Herring, 2004). Textism includes the use of nonstandard forms such as abbreviations, shortenings, and contractions of words, truncation, suppression of vowels, missing capital, missing apostrophe, accent stylisations, homophones, among others. Examples of textism are using figure '4' to replace 'for/four' '2' for 'to/two/too' 'ur' for 'your', 'hw' for how, 'gr8' for great, among others. Even though paralinguistic features such as emoticons, emojis, stickers, and GIFs have been recently added to textism domains; they are still not as popularly used as their non-paralinguistic counterparts such as abbreviations, shortenings, replacements, clippings, tagged messaging, misspellings, punctuation omissions, and so on.

Textism can be described as a language of opportunity, a simplified and easy way to communicate as it is frequently used in CMC due to its synchronicity. The use of textism influences the typing, transformation, speedy transmission of text-based communication, and typographical peculiarities in informal electronic communication. Textism word-formation takes place as a tendency to reduce as many as possible characters typed, and reduce ambiguity while still communicating an idea in the simplest form, which helps accelerate the process of communication (Sun, 2010). The reduction is done by two means; one being the creation of acronyms and initialism, and the other replacement of words with letters or numbers.

Textism, which is common among the youths, has a social effect on both the sender and the receiver; it identifies the user based on what is written, how it is written, and who wrote it. Youths generally are the vanguard for language change and development. Studies, e.g., Chaka et al (2015), Endong & Essoh (2015), and Okuyama (2013) have shown a high use of textism among the youths. Nigerian youths, who have embraced Web 2.0 and mobile technologies at a phenomenal rate, have also adopted the spelling trend of textism as many CMC interactions, are done in textism. Past studies (e.g., Ifukor, 2011; Kadir, Maros, & Hamid (2012), Okata (2017) have shown that many Nigerians have embraced the use of textism for CMC, to the extent that use of textism is causing a distraction and negatively influencing English performance in Nigerian schools. It was found that students who frequently used SMS language also used abbreviated forms of words unconsciously even in formal written communication like application letters written for employment purposes, and essays written in examinations. Odey, Essoh, and Endong (2014) study based on a content analysis of 250 SMS messages generated by 50 third-year students of a Nigerian institution and answers scripts produced in an examination by these students found that intensive use of SMS texting affected students' language literacy and that texting influenced the students to consciously or unconsciously transfer the pattern of written SMS messaging into their essays. This has created a lot of concern for the dearth of the English language and that, if measures are not put in place, the English language is gradually being eroded. This also made a communication analyst (Reuben Abati) expressed his fear in an article written in the Nigerian Guardian Newspaper on June 21, 2009, titled: 'A Nation's Identity Crisis' and cited by Ifukor (2011).

...Nigerians whose lives revolve mostly around the Internet and the blogosphere, the name Nigeria has been thrown out of the window. Our dear country is now 'naija' or 'nija'. What happened to the '-eria'…? The new referents for Nigeria are now creeping into writings, conversations and Internet discourse. I am beaten flat by the increasing re-writing of the country's name not only as naija and nija but consider this: '9ja' or this other name for Nigeria: 'gidi'. There is even a television programme that is titled 'Nigerzie'…. This obviously is the age of abbreviations (p.16).

Even though there are overwhelming advantages that surround the use of textism, the language used in textism has either been supported or considered derogatory in some previous studies. Studies have also observed that text messaging is damaging writing abilities and that when youths write using language shortcuts or textism, they are developing bad writing habits which could influence the ability to successfully write standard English. Textism is described as a 'whole new fractured language', that is not as elegant or polished as the standard English language (Herring, 2001). Thurlow (2006) also expressed reservation about textism when he opined that "the English language is being beaten up, civilisation is in danger of crumbling" (p. 678.) This shows that even though textism is perceived as fast and cost-effective, personal, and nonintrusive with a distinctive style of writing, it is embedded with various inconsistencies which pose a threat to the proper understanding of the intended messages (Okata, 2017). These concerns about the effect of textism on communication competency, literacy, and language, have given rise to several studies, with the argument that excessive use of abbreviations may affect the readability of a document except for the commonly known ones.

Even though some Nigerian scholars (e.g., e.g., Ifukor, 2011; Odey et al. 2014; Okata, 2017; Oluga & Babalola, 2013) have attempted to study the use of textism in Nigeria, however, empirical studies on the use of textism by Nigerian students are limited. This present study provides both an expansion of the scant previous research. First, rather than relying on standardised tests of reading, vocabulary, spelling, and other language-related activities, the current study examines actual chats of the students on Whatsapp platforms. Also, unlike previous studies (e.g., Kadir et al., 2012; Plester et al., 2009; Plester et al., 2008, Okuyama, 2013) that involved either a translation exercise to identify textism density or a text messaging response to specific scenarios, this study directly queried participants about their use of different textism in their everyday electronic communication. Also, while many earlier studies of text messaging have looked at preteens and teens, the current research study examined the writing abilities of young adults (students) who are experienced texters and who are technology savvy. This present study, therefore, investigated the use of textism by the students of the University of Ibadan, Nigeria. The study also investigated the factors that influence the use of textism by the students.

The paper is structured according to the suggestions given by Misra (2021). The introduction gives a background to the study, the research gap, and the objectives of the study. The literature review section reviews studies that are related to the use of textism and also discusses the factors influencing the use of textism. The theoretical and conceptual framework explains the theories that guided the research and how the conceptual framework was developed. The methodology section describes the research steps taken, explaining the research design, the population of the study, the method of data collection, as well as the method of analysis. The research results are presented and discussed in the results and discussion section. The last section includes the conclusion and recommendations, while the last section highlights the contributions of the study to knowledge, limitations of the study, and future research directions.

2. Literature Review

Textism has been studied by some authors from various points of view. Scholars' perception of the use of textism can be divided into two schools of thought described as School of thought A and School of thought B. School of thought A believes that textism can affect the literacy skills of long-term users, suggesting that textism is bad and should not be tolerated. School of thought B, the more liberal authors, perceives textism as a form of language creativity and a language in its rights; hence, sees textism as a creative linguistic stylisation that does not affect the literacy of its texters negatively but rather improves it. While School of thought A

may be right, we believe School of thought B's arguments are worthy of consideration since the usage and patterns of textism are based on the knowledge of the standard English language and might not be the main reason for the decline in literacy skills. However, school of thought B failed to address instances of ambiguity, misrepresentation, and other vices accrued to textism.

Some scholars (e.g., Lyddy, Farina, Hanney, Farrell, and O'Niell, 2014) have also expressed concerns over the effects of 'textism' on literacy by identifying the stress and processing costs associated with reading textism. Some have expressed concerns about the negative effect of the use of textism on English literacy, while some opined that in as much as CMC aids communication, it could also complicate it. Thurlow (2006), for instance, argues that textism negatively affects students' communicational skills, especially the writing reflex skills of users, and that textism influences language use in formal contexts and thereby makes it difficult for users to accommodate the correct orthography of words. Textism patterns have also been linked to a perceived decline in the standard of literacy in children and young adults, who are the largest user groups of texting and CMC worldwide (El-Saghir, 2015; Grace, Kemp, Martin, & Parrila, 2012). Thurlow (2006) gave an analysis of 101 media reports on text and textism and found that most of the media reports showed textism in a 'negative' light. Some other authors such as Oluga & Babalola (2013), Endong & Essoh (2015), and Odey et al. (2014) have taken the stand that the use of textism affects the user's literacy skills negatively.

However, some authors have criticised Thurlow and others claim that the use of textism has a negative impact on literacy skills.

Crystal (2008a, 2008b) opined that textism does not usually contain more than 10% of a message, while the bulk retains standard vocabulary, unlike Thurlow's extract that accounted for over 50% of textism in a school essay. Crystal (2008a) supported the use of textism and based his argument on six pertinent observations: (i) in a typical text message, less than 10% of the words are usually abbreviated or a form of textism, (ii) textism is not a new phenomenon in the world; it has been practiced for several decades; therefore, it is no new language and cannot be a threat to English language literacy, (iii) children and adults use textism, though adults are the more likely culprits, (iv) students do not habitually or recurrently use textism in their homework or examination, (v) before people can text, they had usually first acquired the language literacy, therefore textism is not the reason for bad spelling, and that (vi) textism provides people with the opportunity of engaging with the language through reading and writing, therefore it does not negatively affect language literacy instead it aids language literacy. Plester et al. (2008; 2009) study also supported Crystal 2008a because they found that the use of textism by pre-teens accounted for higher scores on reading and vocabulary tests.

The study of Thurlow & Poff (2011) on text messaging given several contexts such as cross-cultural context, interactional context, pragmalinguistic context, and metalinguistic context also observed that more than focusing on the orthographic form of texting, the defining feature of text messages is for a social function, though there might be an overlap in the textism and formal writing of minority users, vast majority of 'texters' understand the context in which language is used, a skill termed 'metalinguistic competence', which aids an appearance of sociability.

Awoyemi (2013) also explained that textism improves the use of the English language and new strategies that can be learned can be derived from the new genre, explaining that Internet communication is an established language and instead of viewing it in a derogatory manner, further codification and standardisation should be encouraged. Barasa & Mous (2013) submitted that textism has been included in the curriculum of some western countries. A report released by Australian Broadcasting Corporation (ABC) radio, for instance, explained that Australian educators in Victoria are teaching textism as a part of the language art curriculum to high school students (Donovan, 2006). Also, in New Zealand, Qualifications Authorities approved that secondary school students should be allowed to use textism at the end of the year examination papers (Hann & Chalmers, 2006). Therefore, the use of textism might promote, rather than compromise, the literacy skills of users as opined by opposers of textism. Russell (2010) further argues for the need for students to acquire the basis of the English language, so that they could distinguish between grammatically correct and incorrect use of the English language, arguing that the learning of new languages does not necessarily affect a student's ability in the English language.

The review of the literature shows that textism has become a medium for modern communication and has been found outside several CMC domains such as academic work, dictionaries, formal gatherings, and so on. Critical questions have been raised in different works on the use of textism in CMC and they are as follows: Is the use of textism for the sake of brevity and speed or is it a new kind of

writing style? Are there factors that influenced the use of textism communication style? Do texters consider meaning in textism? These are some of the questions that this study provided answers to.

The review of literature also shows that the use of textism varies from country to country. Developed countries have accounted for the majority use of paralinguistic features such as emoticons and repetitions in written format to express or connote face-to-face communication, non-verbal cues, and various feelings of emotions. On the other hand, the use of textism in Africa has accounted for the low usage of these paralinguistic features. More often than not, these paralinguistic features have been exchanged with linguistic stylisations such as abbreviations, misspellings, code-switching, and punctuation omission, among others. Proficiency in native or local languages assists code-switching with textism to express non-verbal cues and feelings of emotions, and proficiency in local languages, especially Nigerian Pidgin, has been identified as a factor for the use of textism in Nigeria. Also, in the literature reviewed, factors like reading processing cost, age range, forms or patterns of textism, and frequency of textism were more prominent, though a good range of literature was based on the effect of textism on literacy skills and writing skills. Some other literature discussed textual characteristics such as message length, non-standard spelling, and sender and message characteristics. In conclusion, the use of textism offers various advantages such as linguistic stylisation which could lead to the development of a new language,

communication channel speed, and ease of use. However, some disadvantages seem to be paramount with the use of textisms such as semantic alteration, misunderstanding, long-term impairment in literacy and writing skills, and negative perceptions in textual communication. Overall, the review of the literature reveals scant empirical studies on the use of textism in various parts of the world, especially in Nigeria. Therefore, this study was designed to contribute to the empirical literature by investigating the level of use of textism and the factors that influence the use of textism among students of a tertiary institution in Nigeria.
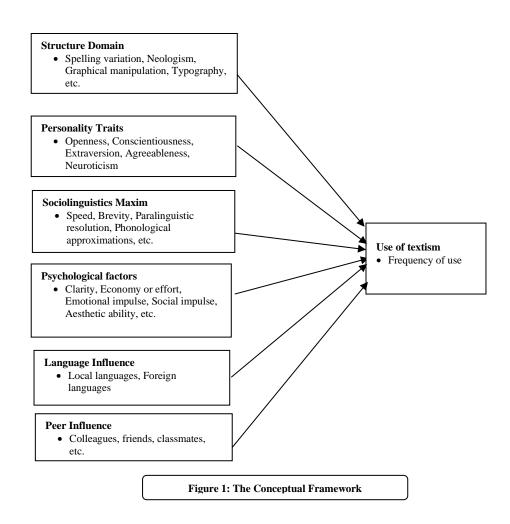
2.1 Factors influencing the use of textism

The prevalence effect of textism in CMC has been said to be caused by several factors, though language use in CMC is specific in many respects. Certain factors such as frequency of textism, speed-based spelling variant, missed capitalisation, and accent stylisation has been accounted for in studies (Kemp, 2010). Awoyemi (2013) observed that the emerging trends of technology and the ability of textism users to interplay an established language such as the English language were factors that aided the communication of the new language, textism. On the other hand, Aziz, Shamim, Aziz, & Avais (2013) identified carelessness, habit, lack of knowledge, and lack of training as factors influencing the use of textism among students. Farina & Lyddy's (2011) study, based on the use of textism via text messaging, observed factors such as a limited number of words per page, frequency of textism, language(s) with highest forms of textism, age range, gender of a texter, reading processing cost, complex multiple strokes on most phones, time pressure, brevity and speed of communication as factors that influence the use

of textism. Olayera (2010) identified among the adolescents thriving factors such as age range, economic and financial constraints as students used textism often to reduce the cost of sending a message, while still trying to communicate appropriately. Other factors are personality, peer pressure and lifestyle, language proficiency, literacy, and local language influence. In addition, Endong & Essoh (2015), observed that socio-cultural factors, the local language, customs, and belief system govern the way and manner people use textism. Lyddy et al. (2014) found that reading processing cost, the use of textism, textual characteristics, message length, non-standard spelling, sender and message characteristics, and word frequency could affect the use of language and the patterns adopted in communication via CMC.

Ifukor (2011) observed five forces that drive the use of textism, which are tendency towards clarity, tendency towards ease or economy of effort, emotional impulses, aesthetic tendencies, and social impulses. Plester & Wood (2009) observed that play on words by the texter, word reading, the vocabulary of the texter, phonological awareness, exposure to text, and engagement with written language are factors that influence the use of textism. The principle of sociality (Speed and brevity, paralinguistic restitution, and Phonological approximations) were factors observed in the study of Kadir et al (2012) and Thurlow & Poff (2011). Muir et al (2017) observed factors such as the nature of the personal relationship and interpersonal communication (both conscious and subconscious), while Plester et al (2009) addressed factors such as phonological

awareness, individual differences, age, short-term memory, and how long the user has owned a mobile phone.

2.2 Theoretical and Conceptual Framework

Several theories and models have been proposed for analysing language use in text-based non-standard forms of which computer-mediated communication is inclusive. Among these, the Computer-Mediated Discourse Analysis (CMDA), the Big Five Personality Traits, the Principle of Sociality (Sociolinguistics Maxim), and the Five Forces were adopted for this study. The conceptual framework as shown in Figure 1 shows the relationship between the independent variables (structure domain, personality traits, sociolinguistic maxims, psychological factors, language influence, and peer influence) and dependent variables (use of textism).

Structure Domain
- Spelling variation, Neologism, Graphical manipulation, Typography, etc.

Personality Traits
- Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism

Sociolinguistics Maxim
- Speed, Brevity, Paralinguistic resolution, Phonological approximations, etc.

Psychological factors
- Clarity, Economy or effort, Emotional impulse, Social impulse, Aesthetic ability, etc.

Language Influence
- Local languages, Foreign languages

Peer Influence
- Colleagues, friends, classmates, etc.

Use of textism
- Frequency of use

Figure 1: The Conceptual Framework

2.2.1 Computer-Mediated Discourse Analysis (CMDA)

The term CMDA was first coined in 1995 (Herring, 2004), and research in CMC has followed closely side by side with the popularisation of the Internet. The theoretical assumptions of CMDA are that discourse exhibits recurrent patterns and these patterns may be produced consciously or unconsciously, meaning that what is observed might be generalisations and not self-reports of the participant's behaviour. Also, it is assumed that discourse involves the speaker's choice and these choices are not conditioned by linguistic, cognitive, and social factors (Herring, 2004). An online conversation takes place via discourse, as discussions by participants are usually typed on a keyboard or keypad and read as text on a computer-based device. While in CMDA, a basic goal is to identify patterns

in discourse that are not readily obvious to a casual observer or the participants themselves. In the broadest sense, any analysis of online behaviour that is grounded in empirical, textual observation is computer-mediated discourse analysis. This study's approach to computer-mediated discourse analysis is informed by a linguistic perspective, that is, through the understanding of language. Its interpretations are based on observations about language and language use in text analysis. The linguistic perspective of CMDA is interested in the language structure, meaning, and use, how it varies according to context, how it changes over time and how it is learned.

CMDA is structured under four domains of language, from the smallest to the largest linguistic unit of analysis: Structure, Meaning, Interactions, and Social Behaviour. The structural level includes the use of newly formed words, special typography and orthography, and/or sentence structure. The meaning level includes the meaning of words, utterances such as speech acts, or larger functional units like macro segments. The interactional level includes turn-taking, topic development, and other means of negotiating interactive exchanges. Lastly, the social level includes linguistic expressions of play, conflict, power, governance, and group membership. The structure domain is adopted for this study as a factor that could influence the use of textism. The Structure domain or the syntactic level is the linguistic level where words are formed and structured. At this level, morphemes and phonemes are arranged according to the rules of the domain language. At the structure level, meaning is optional, the rules guiding the formation of sounds are of importance at this level. The structural phenomena investigated in this study include, but are not limited to, the use of neologism, abbreviations, punctuations spelling variations, typography, graphical manipulations, and word formatives such as homophones, clippings, etc., in students' Whatsapp chats.

2.2.2 The Big Five Personality Model

Personality traits are factors that suggest the differences between attitude, character, behaviour, and choices of individuals. It also helps to structure individuals with shared traits who are most likely to behave the same way or almost the same way in certain situations. The Big Five Personality Trait is a taxonomy or grouping of personality traits and was developed in 1949 by D. W. Fiske and later expanded by researchers including Norman (1967), Goldberg (1990), and McCrae and Costa (1987). The model suggests that nature (family life) and nurture (the way someone was raised) affect personality traits. Tupes and Christal (1961) found five broad personality factors, which gave birth to 'The Big Five Personality Traits' also known as the OCEAN model. Tupes & Christal labelled the personality factors as surgency, agreeableness, dependability, emotional stability, and culture. Over the years, the names of these personality factors have changed in variation and have birth acronyms like OCEAN (openness, conscientiousness, extraversion, agreeableness, and neuroticism) or CANOE (conscientiousness, agreeableness, neuroticism openness, and extraversion). Researchers have found conscientiousness, extraversion, openness, agreeableness, and neuroticism to be

relatively stable from childhood to adulthood.

Openness is characterised by individuals who are open to experience, creative, have a deep appreciation for arts, are open to emotions, adventurous, capable of unusual ideas, imaginative, curious, and always willing to try new things. Conscientiousness is characterised by individuals who are dutiful, self-disciplined, and strive for achievement against all odds. Conscientious people are focused, organised, usually having a preference for planned rather than spontaneous behaviour. Extraversion sometimes referred to as Extroversion, is an individual who gets energised in the company of others, enjoys interacting with people, is fun-loving, enthusiastic, action-oriented, talkative, and assertive. The low-level extraversion are introverted people. Agreeableness reflects individuals who are more concerned about social harmony, they get value for life when they are getting along well with others, they are considerate, trusting, kind, helpful, empathetic, and willing to compromise for others. Neuroticism or emotional instability is the tendency to always experience negative emotions, such as anger, anxiety, or depression. Neurotic individuals are characterised by low tolerance level for stress, are often in a bad mood, exhibit mood swings, and have negative energy for unusually long periods. These personality traits usually have a high and low side; people who have so much of a personality trait and people who have so little, or do not exhibit any of that particular trait. For example, individuals with high openness pursue self-actualisation and euphoric experiences, while individuals with low openness are pragmatic, rigid,

close-minded, and so on. In this study, the influence of the Big Five Personality Traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) on the use of textism was investigated.

2.2.3 The Principle of Sociality (Sociolinguistics Maxim)

Sociolinguistics maxims are maxims that connote the language class that each person in the society is divided into, at different social instances (Grice, 1975). People make choices to choose one of these four maxims. Based on an analysis of the corpus of real text messages and some research findings, Thurlow & Poff (2011) identified typographic or orthographic practices of texting underpinned by three key pragmatic 'maxims' (Grice 1975), which are all serving a general 'principle' of sociality. The maxims are brevity and speed, paralinguistic restitution, and phonological approximation. The first maxim (brevity and speed), is a two-fold maxim and measures the speed and brevity of the textism user, such as the abbreviation of lexical items (including letter-number homophones), replacement or letter/number, homophones, misspellings, punctuation omission, and the relatively minimal use of capitalisation and standard, grammatical punctuation (e.g., commas and spaces between words), capitalisation and so on. This two-fold maxim is motivated by the ease of turn-taking (i.e., back-and-forth exchanges) and social interaction rather than technological limitations found in text messaging, though response time and expectation of reciprocity may vary. The second maxim (paralinguistic restitution) addresses the loss of body language, socio-emotional and

physical communication, and language features such as stress and intonation, and paralinguistic restitution such as emoticons, stickers, and graphics. Phonological approximation, the third maxim, adds to paralinguistic restitution and is used to hear the voice of the user such as accent stylisation. It engenders the kind of playful, informal register appropriate to the relational orientation of texting. Usually, the three maxims occur distinctively, and in most cases, all principles are served simultaneously and equally, though, at other times, the second and third maxims overlap and could override the first maxim of brevity-speed (Spilioti, 2009). The availability of these maxims in students' chats and the influence of these socio-linguistic maxims (brevity and speed, paralinguistic restitution, and phonological approximation) on the use of textism were investigated.

2.2.4 Five Forces (Psychological factors)

The five forces, proposed by Tauli (1958, p. 50), were adopted to conceptualise the psychological factors that drive innovations in language use. Psychological factors are factors that enhance the use of textism in various domains. The factors, referred to as psychological factors in this study, are a tendency towards clarity, a tendency towards ease or economy of effort, emotional impulse, social impulse, and aesthetic tendencies. Thus, the influence of these factors on the use of textism by university students was investigated.

2.2.5 Language Influence

Language influence according to Endong & Essoh (2015), is the influence of a certain level of language knowledge and proficiency of a texter on his/her use of

textism. Endong & Essoh (2015) explained that SMS texting by Nigerians is influenced by some socio-cultural and linguistic factors. Texters are, for instance, often influenced by local (vernacular and vehicular) languages (Feuba, 2009). Some of these languages (for instance Igbo and Nigerian pidgin) are principally oral or do not enjoy a conventional (generally accepted) orthography (Salawu, 2006; Esizimetor, 2010). Studies (e.g., Chiluwa, 2008; Ifukor, 2011; Omotoyinbo, 2021) have identified that the Nigerian languages such as pidgin English, Yoruba, Igbo, American, and British English are various forms of language that influence the use of textism. This theoretically predisposes some of the SMS messages generated by Nigerian texters (who are users of such indigenous languages) to have qualities of oral language and features of the local indigenous language and cultures. For instance, Ifukor (2011) establishes that Nigerian Pidgin and the mother tongue influence the use of textism, which also increases the use of code-switching as long as linguistic tolerance is practiced in Nigeria. Hence, the influence of language on the use of textism by the students was investigated in this study.

2.2.6 Peer Influence

The influence of peer pressure is another variable introduced by the researchers. Peer influence has been shown in previous research as a facilitator of social conduct, especially in adolescents (Steinberg & Monahan, 2007; Zhu, Lu, & Chang, 2020). Peer influence is a combination of two processes: selection (preferentially affiliating with like-minded friends with similar behavioural proclivities) and socialisation (a tendency to become similar to one's friend over time). Peer acceptance

and group membership have been shown to motivate attitudes and behaviors. It is assumed that the influence of the students' peers could influence their use of textism while chatting, hence, the inclusion of the variable.

3. Methodology

The descriptive survey research design was adopted. A mixed-method approach was used as both qualitative and quantitative data were collected. The location of study is the University of Ibadan, Oyo State, Nigeria, and the population consisted of both undergraduate and postgraduate students. The sampling frame collected from the Academic Planning Unit indicated 26,004 students (15,394 undergraduates and 10,610 postgraduates) as of the 2018/2019 session. A probabilistic sampling technique and multi-stage sampling method were employed to select the sample. Twenty departments (8 Postgraduate departments and 12 Undergraduate departments) that had WhatsApp groups and whose members were willing to participate in the study were purposively selected. The total population of the Whatsapp groups is 1405. Census sampling was adopted.

An online questionnaire was sent to all the members of the Whatsapp groups. The questionnaire was structured and contained both open and closed-ended questions. The questionnaire collected data on the demographics of the students, use of textism in chats, frequency of use of textism, and factors influencing the use of textism using a 5-point Likert Scale (Strongly Agree=5, Agree=4, Undecided=3, Disagree=2, Strongly Disagree=1). The questionnaire was

examined by two lecturers at the university for face and content validity. The reliability of the instrument was tested through internal consistency. The instrument was pre-tested by 45 undergraduates of the Department of Medicine and Surgery, who were not part of the main study population. Results of the Cronbach alpha show that all the variables have coefficients above 0.7, which shows that the instrument is reliable (Personality Traits = 0.780, Sociolinguistic maxims = 0.762, Psychological factors =0.870, Structure domain = 0.781, Peer influence = 0.782, and Language influence = 0.734). After, six weeks and several reminders, 546 students responded and completed the online questionnaire. The data were analysed with descriptive statistics and Spearman correlation.

The researchers got permission from the students to join the department's WhatsApp groups as silent observers. This is to enable the researchers to get involved in the individual departmental group chats for observation as non-participatory observers. The WhatsApp groups were observed for two weeks, while chats in the groups were studied and downloaded. The data from the Whatsapp group were exported into .sav files and analysed with WordSmith Tool 5. This method is appropriate for the study because it avoids human error that could occur via transcribing the text message to paper to prevent privacy infringement of the texters and for anonymity and confidentiality. With an average of 110 conversation data daily, 30,605 conversation data were generated. The results were presented and explained with the frequencies and word cloud representations. The study followed ethical guidelines. The students were

informed and acquainted with the research before joining the groups. The details of the study, the data to be collected, and what it will be used for were adequately explained to the students. The anonymity of the students was protected as their identity and personal details are not disclosed in the results presented.

4. Results and Discussion

4.1 Questionnaire Data Analysis

This study examined textual characteristics of 20 departmental Whatsapp groups, which consisted of 75,122 words, of which 11,130 words (14.8%) were textism. This percentage is lower than what previous studies have observed. For instance, Thurlow & Brown's (2003) found 19.0% use of textism, while Lyddy et al (2014) found 25.0%. However, our finding is higher than that of Crystal's (2008b) study which was 10.0%. The study found that most of the students were aware of their use of textism in chats as confirmed by them in the questionnaire and as also observed in the Whatsapp chats. The results of the analysis of the questionnaire data are presented in this section.

4.1.1 Demographic distribution of the respondents and their use of textism

The results of the demographic distribution of the respondents are presented in Table 1. Most were females (53.5%), most were within the age range 21–24 years (41.8%), and most were undergraduates (59.7%). Also, the results reveal that most of the students (48.0%) had been using phones for 6-10 years, and most (55.1%) spent an average of 6-10 hours on phones daily. most admitted that they consciously (54.9%) and unconsciously (51.6%) used

textism while chatting. Brevity (44.5%) is the major reason indicated by the students for their use of textism, while some others indicated speed (28.0%) and creativity (14.8%). Textism communication is limited to how brief one can communicate a thought while still passing across the same message. The texter's LAD (Language Acquisition Device) plays a role to determine how brief or not so brief the textism would be communicated. For example, 'how are u?' can be said as 'hw r u?' or 'hw ar yhu?' or 'hw re u?'. The difference in the choice of the word 'are' and 'you' by the texter is determined by their knowledge and their brain vocabulary. Speed comes to play when the texter relies on T9 to complete his or her thought, and in this case, meaning is usually ignored. Sometimes, intentional or unintentional misspellings are results of trying to gain speed while typing.

Table 1: Frequency distribution of demographic characteristics of the students (N=546)	
Measurement scales	Frequency/Percentage
Demographic Variables	
Age	
16-20	109 (20.0)
21-24	228 (41.8)
25-29	164 (30.0)
Above 30	45 (8.2)
Sex	
Male	254 (46.5)
Female	292 (53.5)
Level of Study	
Undergraduate	327 (59.7)
Postgraduate	220 (40.3)
Use of textism	
Yes	300 (54.9)
No	246 (45.1)
Do you unconsciously use textism while chatting	
Yes	282 (51.6)
No	264 (48.4)
Reasons for use of textism	
For brevity	243 (44.5)
For speed	153 (28.0)
For creativity	81 (14.8)
Don't know	68 (12.7)

4.1.2 Frequency of use of textism

The analysis of the frequency of use of textism is presented in Table 2. A below-average number of the students reported that they used textism daily and in every chat (47.4% and 44.0% respectively). Most (72.0%) disagreed that they were addicted to textism, while an above-average (54.9%) were comfortable with using textism in every chat. The students were also able to identify the types of textism they used. This supports the findings of Chaka et al (2015), Okata (2017), Oluga & Babalola (2013), and Omotoyinbo (2021) that students use textism copiously and unconsciously.

4.1.3 Types/patterns of textism used

The students were asked to indicate the types of textism used and the frequency of use. A five-point Likert type scale ranging from 'Never' to 'Always' was used to assess the types and frequencies of use of textism. The results (Table 3) show that all mean values are in the range of 4 with the use of abbreviations, acronyms, or initialisms ranking topmost ($\mu=4.12$) and the use of homophones ranked lowest ($\mu=3.49$).

Table 2: Frequency of use of textism (N=546)

Measurement	Daily	Use of textism in every chat	Addicted to textism	Comfortable with the use of textism in every chat
	Freq/%	Freq/%	Freq/%	Freq/%
Yes	259 (47.4)	240 (44.0)	98 (17.9)	300 (54.9)
No	287 (52.6)	306 (56.0)	393 (72.0)	246 (45.1)
Not sure	0	0	55 (10.1)	0

Table 3: Types of textism used

Measurement Use of:	Never Freq/(%)	Seldom Freq/(%)	Sometimes Freq/(%)	Often Freq/(%)	Always Freq/(%)	Mean	St. dev	N
Abbreviations, acronyms or initialism	11 (4.0)	76 (13.9)	50 (9.2)	137 (25.1)	261 (47.8)	4.12	3.178	535
Replacement of words by letters/numbers	28 (5.1)	101 (18.5)	80 (14.7)	250 (45.8)	87 (15.9)	4.10	6.413	546
Accent stylisation	50 (9.2)	125 (22.9)	131 (24.0)	137 (25.1)	103 (18.9)	3.99	1.221	546
Unintentional and deliberate misspellings	53 (9.9)	130 (24.4)	115 (21.4)	131 (24.4)	106 (19.8)	3.95	6.367	535
Space omission	79 (14.5)	120 (22.1)	130 (23.9)	124 (22.8)	91 (16.7)	3.93	6.049	544
Capitalisation	69 (12.9)	124 (23.1)	129 (24.1)	135 (25.2)	78 (14.6)	3.81	1.117	535
Clippings	68 (12.6)	126 (23.3)	138 (25.5)	118 (21.8)	91 (16.8)	3.69	3.23	541
Punctuation omission	73 (13.5)	130 (24.0)	138 (25.5)	128 (23.6)	72 (13.3)	3.52	3.921	541
Phonological approximation	70 (13.1)	135 (25.2)	132 (24.6)	122 (22.7)	77 (14.4)	3.50	1.248	536
Homophones	93 (17.2)	143 (26.4)	128 (23.7)	102 (18.9)	75 (13.9)	3.49	1.271	541
Note: Never = 1, Seldom = 2, Sometimes = 3, Often = 4, Always = 5.								

4.2 Whatsapp Chats Analysis

The Whatsapp chats contain 243,004 words, including emoticons, emojis, pictures, and photographs. The results of the analysis of the students' chats on Whatsapp analysed with WordSmith Tool 5 are presented in this section.

4.2.1 Types of Textism observed in the Whatsapp Chats

The analysis of the Whatsapp chats revealed a high use of textism and the various types of textism used by the students. Table 4 presents the summary of the frequency of the various types of textism observed in the chats, which included phonological approximation, unintentional and deliberate misspellings, accent stylisation, abbreviations, acronyms or initialism, replacement of words by letters/numbers, clippings, inappropriate capitalisation, punctuation omission, space omission, homophones, and semantically unrecoverable. Phonological approximation (30.5%) was the most used, while homophones and onomatopoeia (0.01% respectively) were the least used.

Table 4: Types of textism observed in the Whatsapp chats	
Textism Types	Percentage (%)
Phonological approximation	30.50
Misspellings	27.90
Accent stylisation	24.70
Abbreviations, acronyms, or initialism	9.90
Replacement of words by letters/numbers	4.54
Clippings	1.22
Inappropriate capitalisation	0.80
Punctuation omission	0.40
Semantically unrecoverable	0.02
Homophones	0.01
Onomatopoeia	0.01

Further analysis of each type of textism used was done and the results were presented as follows.

4.2.1.1 *Use of phonological approximation*

As shown in Table 5 and Figure 2, Phonetic/Phonological approximations were the most frequently used by the students. Approximations such as 'Pls' instead of 'please' was the most used (33.8%). Others are 'Congrats' instead of 'congratulations', 'Bday' in place of 'birthday', 'Cos' instead of 'because', 'Nd' in place of 'and', 'Abt' to replace 'about', etc. Approximations are used to reduce the keystrokes and it occurs when a user creates patterns in which their readers can 'hear' their voice. This finding conforms with the findings of Kadir et al (2012), and Okata (2017). The rules guiding which letter should be removed or not are guided by the language proficiency of the user in grammar and the rules of grammar. Also, meaning plays a role in phonological approximation, that is, letters that would not disrupt the meaning of the words are usually removed.

Table 5: Word count of phonological approximations used	
Word	Frequency count/ Percentage
Pls	846 (33.84)
Congrats	208 (8.32)
Re	117 (4.68)
Cos	113 (4.52)
Wan	112 (4.48)
Nd	87 (3.48)
Bday	69 (2.76)
Tho	63 (2.52)
Fr	56 (2.24)
Wat	55 (2.2)

Figure 2: Word cloud representation of phonological approximation used

4.2.1.2 *Use of misspellings*

The frequency distributions of the misspellings used by the students are presented in Table 6, and the word cloud representation in Figure 3. The most common misspelling is '*don*', which is a pidgin English meaning 'have' or 'had'. Others are 'congrata' meaning 'congrats', '*whyy*' for 'why', '*sease*' for 'cease', etc. These misspellings could be deliberate or unintentional. Unintentional and deliberate misspellings have been accounted for by several authors such as Crystal (2008a) and Chaka (2015), Okata (2017), and Omotoyinbo (2021). Unintentional misspellings could originate from the imperfect typing skills, auto-correction mode or inadequate revision of the message to be posted by the writer such as 'imagine' for 'imagin', 'wel' for 'well', and so on. Deliberate misspellings, on the other hand, originates from a conscious effort of the writer to create a different language. To play with words or a new form of linguistic stylisation, such as 'luv' for 'love', 'byday' for 'birthday', etc. Our analysis revealed that the students used unintentional and deliberate misspellings such as 'don', which is a pidgin English meaning 'have' or 'had'. Others are

'congrata' meaning 'congrats', 'whyy' for 'why', 'sease' for 'cease', etc. In a study by Kemp (2010), spelling variations influenced the use of textism.

Table 6: Word count of 10 most frequent misspellings used	
Misspellings used	Frequency count/ Percentage
Don	205 (82.0)
wee	19 (7.6)
boi	8 (3.2)
Dum	3 (1.2)
Oin	3 (1.2)
Poof	2 (0.8)
Ooin	1 (0.4)
Fuuuu	1 (0.4)
sease	1 (0.4)
Congrata	1 (0.4)

Figure 3: Word cloud representation of the type of misspellings used

4.2.1.3 *Types of accent stylisation used*

The various types of accent stylisation used by the students are shown in Table 7. The word cloud is also presented in Figure 4. Accent stylisations such as Na, dey, Abi, Ni, Ah, Abeg, oya, sha, sef, gonna were observed. Accent stylisation is when a user or speaker tries to represent a particular pronunciation based on his/her regional speech, such as 'um' for 'I am', 'da' for 'the', 'thanx' for 'thanks', 'ma' for 'my', 'nyc' for 'nice', 'skool' for school, 'wanna' for 'want to', 'dat' for 'that', and 'cum' for 'come' (Plester et al, 2008; Crystal 2008a, Thurlow& Brown, 2003). Indrová (2011, p. 26) illustrated number replacement and

accent stylisations with an example from a chat room user 'wots that serposed 2 mean???' meaning 'what's that supposed to mean?'. This user inculcated several phonemic rules of the English language. Supposed is transcribed as [sə'pəʊzd] in British English. Firstly, the homophonic transcription of [su] - /sə'/ could be orthographically written as 'ser'. Secondly, double letters in the English language are transcribed as a single letter, [pp] – /p/. One could predict the social identity of the writer based on the use of /sə'/. She/he could be identified as a Briton based on his/her choice of replacement, if the same set of words were to be abbreviated by a Nigerian, he/she would probably use a different replacement choice like 'suppsd, suposd'. The word cloud generated showed that the students used accent stylisation such as Na, dey, Abi, Ni, etc. The accent stylisation is used to depict the personality, the language spoken by students, their tribes, etc. For example, 'dey', 'abeg', 'wetin', and 'na' are words commonly used by the Igbo tribe in Nigeria; words like 'abi', 'oya', 'jare' are commonly used words by the Yoruba tribe, while a word like 'walahi' is commonly used by the Hausa tribe as well as the Muslims.

Figure 4: Word cloud representation of the type of accent stylisation used

4.2.1.4 *Types of abbreviations, acronyms, or initialisms used*

The frequency shown in Table 8 and the word cloud shown in Figure 5 shows some of the types of abbreviations, acronyms, or initialism used by the students. Words such as 'U' (you), 'D' (the), 'Lolz' (laugh out loud), 'B' (be), 'Ur' (your or you are), 'brb' for 'be right back', 'N' (and), 'Hbd' (happy birthday), 'Llnp' (long life and prosperity), 'Ijn' (in Jesus name), 'Y' (why), 'Lmao' (laugh my ass off), 'Wullnp' (wish you long life and prosperity), 'Uwc' (you are welcome), etc. were frequently used. The analysis also showed that the use of single letters for abbreviation was common, which supports most of the students' (44.5%) response that brevity made them use textism. Abbreviation comprises the use of initial letters of several words that constitute a team, while an Acronym is a pronounceable word formed via initial letters of a word; usually written in capitals. On the other hand, initialism is the unpronounceable variation of an abbreviation, comprising initial letters of a term, and is usually used instead of a particular term (Crystal, 2008b; Plester, Wood & Joshi, 2009; Thurlow & Brown, 2003). Most abbreviations used by the

Table 7: Word count of 10 most frequent accent stylisations used	
Accent stylisations used	Frequency count/ Percentage
Na	1320 (26.4)
Dey	1132 (22.7)
Ni	467 (9.3)
Abi	399 (8.0)
Abeg	319 (6.4)
Sha	211 (4.2)
Ah	204 (4.1)
Sef	195 (4.0)
Oya	172 (3.4)
Jare	151 (3.0)

students were initialism, which is mistakenly confused for acronyms. This conforms with the findings of previous studies such as Ifukor (2011), Okata (2017), and Omotoyinbo (2021).

Table 8: Word count of abbreviations used	
Abbreviations used	Frequency count/ Percentage
U	2206 (31.5)
D	1213 (18.3)
Lol	782 (11.1)
B	744 (10.6)
Ur	674 (9.6)
N	395 (5.6)
Hbd	193 (2.7)
Llnp	175 (2.5)
Ijn	88 (1.3)
Np	88 (1.3)

Figure 5: Word cloud representation of the types of abbreviations used on Whatsapp groups

4.2.1.5 *Replacement of words by letters/numbers*

Table 9 and Figure 6 present the results of the analysis of the replacement of words by letters/numbers. Some examples of replacements used by the students of the Whatsapp groups are @ (at), *b4* (before), *2day* (today), *4* (for or four), *some1* (someone), *celebr8* (celebrate), *2moro* (tomorrow), etc. The analysis shows that the use of even numbers for number or word replacement was common in the students' chats. Replacement of words by

letter/number, also called logograms, phonetic reduction, or syllabograms were also used by the students. This involves the replacement of a part or whole of a word by letter(s) or number(s) (Thurlow & Poff, 2011; Thurlow & Brown, 2003; Plester et al., 2008). The replacement of words with letter(s) or number(s) aids the ease of use in the process of typing a message; that is, the number of keystrokes being typed is reduced. The condition or rule that governs replacement is that the letter or number that would be used instead, must be pronounced the same way as the unit of the word it would replace (Sun, 2010) Even numbers from 2 to 10 are widely used as number replacement in textism as found in our study (e.g., '@' to replace 'at', 'b4' to replace 'before', '2day' for 'today', figure 4 to replace 'four', 'some1' for 'someone', 'celebr8' for 'celebrate', and '2moro' instead of 'tomorrow', etc.)

Table 9: Word count of replacement of words by letters/numbers	
Replacement of words	Frequency count/ Percentage
@	113 (64.9)
B4	42 (24.1)
Some1	6 (3.5)
2day	4 (2.3)
2moro	4 (2.3)
4	4 (2.3)
Celebr8	1 (0.1)

Figure 6: Word cloud representation of replacement of words by letter/number used

4.2.1.6 *Use of clippings*

It was also found that the students minimally used clippings such as 'twasnt' to replace 'it wasn't', 'goin' to replace 'going', etc. Table 10 and Figure 7 show the frequency count, percentages, and word clouds representation. Clipping is described as words with missing end letter(s) or silent vowels. This occurs when a user deletes a silent 'h' or the last 'g' in a word as if trimming the word. Days of the months and months in the year are usually shortened or clipped. Other examples include 'havin' for 'having', 'wil' for 'will', and 'tanks' for 'thanks' (Thurlow& Brown, 2003; Crystal, 2008a). Our study found minimal use of clippings in the students' chats. This agrees with the study of Omotoyinbo (2021).

Table 10: Word count of phonological approximations used	
Phonological approximations	Frequency count/ Percentage
Em	1 (33.3)
Twasnt	1 (33.3)
Goin	1 (33.3)

Figure 7: Word cloud representation of the use of clippings

4.2.1.7 *Use of inappropriate capitalisation*

The findings as presented in Table 11 and Figure 8 also showed that the students used inappropriate capitalisation when chatting. Examples identified are 'UNAAAAA NO GO SLEEP SE!!!', meaning 'Won't you sleep?', 'HAPPY BIRTHDAY!!!', etc. Inappropriate capitalisation, as observed in the WhatsApp groups usually comes with 3 exclamation marks at the end, to call for attention or to show excitement or emphasis. Mostly in textism, lowercase letters are used instead of uppercase letters when writing names, pronoun 'I', and at the beginning of sentences. Sometimes, only lowercase letters are used in sentences, except in the case of emphasis. Laying emphasis with strictly capital letters might be considered rude and shouting in certain instances. Indrová (2011) suggested that the sender could either repeat letters or characters and/or use copious punctuation signs such as 'LOL at how me being a girl is sooooo important only cos it's sport' or 'NOTHING HAPPENS!!!!!'. In such an instance, capitalisation gains a new function; it is used for emphasis, and this is a paralinguistic function compared to its initial grammatical function. On the other hand, case switching is when a user interchanges lower case when he/she is supposed to use upper case and vice versa such as 'HaPPy Belated bIRTHdAY' (Happy belated birthday!).

Table 11: Word count of inappropriate capitalisation used	
Inappropriate Capitalisation	Frequency count/ Percentage
HAPPY BIRTHDAY!!!	1 (50.0)
UNAAAAA NO GO SLEEP SE!!!	1 (50.0)

Figure 8: Word cloud representation of the use of inappropriate capitalisation

4.2.1.8 *Use of punctuation omission*

The most frequently used punctuation omission observed in our study is 'its' (Figure 9), which was used 495 times. Punctuation omission usually has a different function in CMC textism. The apostrophe is usually dropped in English grammar (Lyddy et al., 2014). The apostrophe indicates a contraction in words such as 'I'm', 'what's', and 'didn't'. But in textism, such words become 'im', 'whats' and 'didn't' respectively. The apostrophe is deleted, thereby creating a different word entirely. Other forms of punctuations are usually missing altogether such as full stops, commas, and question marks, either because of typing speed or ignoring the ambiguity that it could cause. This mostly increases reading cost, since it might need clarifications unlike capitalisation, in which a change of case rarely causes ambiguity.

Figure 9: Word cloud representation of punctuation omission

The use of homophones and semantically unrecoverable by our participants were minimal in the Whatsapp chats. Homophones are the use of each of two or more words having the same pronunciation but different meanings and spellings. Two or more words may have the same sound but different spellings and meanings. Some examples found are the use of 'knew' instead of 'new', 'axes' instead of 'axis', 'week' instead of 'weak', 'all' and 'hall', 'core' and 'corp', among others. Semantically unrecoverable are words apparently not correct in the current context, or where the texter's intended word is not clear. These words are not clear grammatically but the words may well have been understood by the texters themselves or might have been clear had the context been well explained or reinstated. An example found in the Whatsapp chats is: "*Always 'skubbido' the washroom beside the occupied one*". In this sentence, the word 'skubbido' is semantically unrecoverable, but maybe well understood by the texter.

Also, the use of Onomatopoeia influenced by the local language of the texter was observed in the Whatsapp chats. Words such as 'ghen ghen', 'yeee', were used to make an effect or show what was felt by the texter. Also, the use of extension or repetition of the last alphabets to show emphasis or excitement, such as 'ohhhhhhh', 'osheyyyyy', 'guyyyyyyy', 'takeeee', 'thissssss', 'babyyyyyy', 'madddd', 'meeeee', 'likeeeeeeeee', 'heheeeee', etc., were observed in the chats.

4.3 Factors Influencing the Use of Textism

Five hypotheses were tested using Spearman's rank correlation to identify the factors that influenced the use of textism by the students. The strength and the direction of association of the variables were determined. The hypotheses were tested at a 0.05 level of significance. The outcome (dependent variable) is the use of textism, while the independent variables are structure domain, personality traits, sociolinguistic maxims, psychological factors, language influence, and peer influence. Table 12 presents the results of the test of hypotheses.

Table 12: Test of hypotheses results			
Spearman's rho	Independent variables		Use of textism (dependent variable)
	Personality Traits	Correlation Coefficient	.480
		Significant	.000
		Number	534
	Sociolinguistic maxims	Correlation Coefficient	.595
		Significant	.015
		Number	537
	Psychological factors	Correlation Coefficient	.489
		Significant	.000
		Number	537
	Structure domain	Correlation Coefficient	.388
		Significant	.514
		Number	532
	Peer influence	Correlation Coefficient	.657
		Significant	.000
		Number	532
	Language influence	Correlation Coefficient	.581
		Significant	.000
		Number	529

The test of hypotheses revealed that all the independent variables except the structure domain have significant relationships ($p<0.05$) with the use of textism. Sociolinguistic maxims, peer influence, and language influence have strong and positive correlations (0.595, 0.657, and 0.581 respectively), while Personality traits and psychological factors have moderate and positive correlations (0.480 and 0.489 respectively).

Our study found a positive and moderate correlation and a significant relationship between the personality traits of the students and their use of textism. Personality traits have been confirmed by many studies as a factor that could influence or predict attitudes and behaviours. It has also been demonstrated that personality traits, and especially the BFP factors influence various aspects of interpersonal communication and that personality influences how people behave once they find themselves in a communication situation (Frederickx & Hofmans, 2014). For instance, people with openness traits are likely to use textism because such individuals are open to experience, have a deep appreciation for arts, are open to emotions, adventurous, capable of unusual ideas, are imaginative, curious, and always willing to try new things. Also, agreeableness and extraversion may positively influence the use of textism because people with these traits enjoy interacting with people, are fun-loving, enthusiastic, action-oriented, and like to talk and assert themselves. However, people who exhibit conscientiousness are self-disciplined, and strive for achievement against all odds; hence, this trait may have a negative correlation with the use of textism. Neurotic people are characterised by low tolerance level for stress, they are often in a bad mood, and have negative energy for unusually long periods; hence may not be disposed to wasting time texting in normal English.

The usage of textism by the students' peers also influenced the use of textism as also found by Durkin, Conti-Ramsden, & Walker (2011), Elvis (2009), Lee (2011), and Verheijen (2018). This research study observed the influence of the peer group syndrome and it observed that peer group influences textism as most respondents agreed that they used textism because it is in vogue. Lee (2011) explained that students more exposed to texting are influenced by 'generation peers. We also found that the psychological factors influenced the use of textism. Some studies (e.g., Ifukor, 2011) have shown that psychological factors influence the use of textism because clarity is important in expressing an idea and because of the need for ease of typing, economy of effort, and time.

Language is how cultural heritage and societal values are transmitted from one generation to another. The study also found the influence of language on the use of textism. Copious use of the Nigerian Pidgin and American English were observed in the Whatsapp chats. This supports the findings of Ifukor (2011) who also observed that native language and second language influenced the use of textism. This study observed the use of textism in the departmental WhatsApp group chats, even though the platform was used for academic and social interactions. Mostly, academic discussions were formally communicated in the standard English language, even though the use of textism was observed in some academic communications. This shows that some students could distinctively change context and switch domains from formal to informal. and vice versa. The use of British

and American English and local languages, such as Nigerian pidgin and Yoruba language were observed. Some students code-switch freely to show their proficiency and literacy skills in British and American English. Yoruba language could be more prominent because it is the local language of the state where the research was conducted.

Sociolinguistic maxims significantly influenced the use of textism. The choice to express either one of or more sociolinguistics maxims such as the choice for speed instead of brevity or the choice of the persona's voice, personality, body language, and emotions is determined by the situation to be expressed. A texter's choice to use either 'lol' for 'laugh out loud', a smiley, 'loml' emoticon, or a GIF sticker to express the same thought is determined by which of the sociolinguistic maxims that he or she prioritises. He or she could use one or more maxims to express the same thing as observed in the students' chats.

The structure domain such as new words, also known as a neologism, and spelling variations were observed in the students' chats. However, the structure domain has no significant relationship with the use of textism by the students. This contradicts the study of Chaka (2015) which observed that the structure domain, also termed linguistic textism, was prominent in their study with 82% on Instant messenger (IM). This finding also disagreed with that of Herring (2004) that the structure domain is one of the four domains of language affecting the use of textism.

5. Conclusion and Recommendations

Face-to-face communication is gradually been overtaken by virtual communication, which made this study focus on the use of textism in CMC. The study confirms the use of textism in CMC by students of a tertiary institution in Nigeria as textism was used highly and consciously and unconsciously in formal and informal discussions. A below-average number of the students reported that they used textism daily and in every chat (47.4% and 44.0% respectively). Most (72.0%) disagreed that they were addicted to textism, while an above- average (54.9%) were comfortable with using textism in every chat. Brevity, speed, and creativity were major reasons for the use of textism. The students' personality traits, peer influence, psychological factors, language, and sociolinguistic maxims significantly influenced the use of textism, while structure domain did not. The study recommends that there should be sensitisation programmes such as language clinics to reduce the high use of textism interaction, especially in formal discussions. English language should be taught with more creativity to enhance its use among students instead of the use of textism because creativity is one of the reasons students claim to use textism frequently. Students should be made aware that constant use of textism is detrimental to their effective use of the English language. As Grice (1975) opined, textism is governed by some unsaid rules and so the speaker's contribution must be informative as required, relevant, and not ambiguous; hence, efforts should be made to ensure that textism conveys the messages to the receivers.

6. Contribution to Knowledge, Limitations of the Study and Future Research Directions

This study provides empirical findings on the use of textism by university students in Nigeria and enriches the literature on the study of computer-mediated communication. The researchers acknowledge the fact that this study may not be generalisable because of the small population of the study, which is a limitation of the study. Another limitation is that the location of study is southwestern Nigeria; hence, the Yoruba language which is a native local language in the region could influence the use of textism, even though the university admits students from other parts of the country. Therefore, other regions of the country could be studied to investigate the influence of the local language on the use of textism. The use of textism by students in other universities in Nigeria could also be studied. Other factors not identified in this study could also be studied.

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